UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,088	06/22/2006	Takashi Kawamura	2006_0930A	8905

52349   7590   12/23/2010
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EXAMINER
SELLERS, DANIEL R

ART UNIT	PAPER NUMBER
2614	

NOTIFICATION DATE	DELIVERY MODE
12/23/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)
Office Action Summary	10/584,088	KAWAMURA ET AL.
	Examiner	Art Unit
	DANIEL R. SELLERS	2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *14 December 2010*.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-5 and 7-10* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-5 and 7-10* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *22 June 2006* is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All b) ☐ Some * c) ☐ None of:

      1. ☒ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed 12/14/10 have been fully considered but they are not persuasive.

2.   Regarding claim 1, the examiner respectfully disagrees. The combination of Suito and Stella makes obvious these features. Specifically, Stella teaches "a threshold value, the set threshold value being a minimum hold value, wherein the set minimum hold value represents a minimum value of the audio data included in the program signal, follows a detected noise level, which is smaller than an immediately previous hold value, each time when the noise level is detected, and gradually increases during a time when the noise level smaller than the minimum hold value is not detected" (see Stella, column 6, lines 35-50 in combination with column 4, lines 23-65). Stella teaches a gradually increasing threshold, which follows a noise level. Stella is also relied upon to teach portions (ii) and (iii) of the associated claim limitations.

3.   Regarding claims 2-4 and 7-10, see the preceding argument with respect to claim 1. The combination of Suito and Stella makes obvious these features.

Claim Rejections - 35 USC § 103

4.   The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5.   **Claims 1-4 and 7-10** are rejected under 35 U.S.C. 103(a) as being

unpatentable over Suito et al. (previously cited and hereinafter Suito), US

2002/0054242 A1, further in view of Stella et al. (previously cited and hereinafter

Stella), US 7,356,464 B2.

6.   Regarding **claim 1**, Suito teaches a particular program detection device

for detecting a particular program segment in a program signal including at

least audio data of a program, the particular program detection device (see

figure 1 and figure 2, unit 3) comprising:

> *a noise level detecting section operable to detect a noise level of the audio data*
> *included in the program signal* (see Suito, ¶ 0084);
> *a detection sensitivity determining section operable to determine a detection sensitivity*
> *for detecting a particular program in the program signal, the detection sensitivity being*
> *determined based on the noise level detected by the noise level detecting section* (see Suito,
> *¶ 0078-0084);*
> *…; and*
> *a particular program determining section operable to determine a time interval*
> *between each silent portion detected by the silent portion detecting section to determine the*
> *particular program segment* (see Suito, ¶ 0104 and figures 12A-12C).

Suito teaches the above and teaches a silent portion detecting section

operable to detect a silent portion of the audio data included in the program

signal using the set threshold value (see Suito, ¶ 0088 and figure 8). However,

Suito does not appear to teach:

> *a silent portion detecting section operable (i) set a threshold value, the set threshold*
> *value being a minimum hold value, wherein the set minimum hold value <u>represents a minimum</u>*
> *<u>value of the audio data included in the program signal, follows a detected noise level, which is</u>*
> *<u>smaller than an immediately previous hold value, each time when the noise level is detected,</u>*
> *<u>and gradually increases during a time when the noise level smaller than the minimum hold value</u>*
> *<u>is not detected,</u> (ii) change a rate of the increase of the minimum hold value according to the*
> *detection sensitivity determined by the detection sensitivity determining section, and (iii) detect*
> *a silent portion of the audio data included in the program signal using the set threshold value;*

Stella teaches a method of detecting signal power and a silence detector using the detected signal power (see Stella, abstract). Specifically, Stella teaches a set threshold value being a minimum hold value representing a minimum value of the audio data included in the program signal, wherein the set minimum hold value increases over time, and a change of rate of the increase of the minimum hold value according to the detection sensitivity determined by the detection sensitivity determining section (see Stella, column 2, lines 9-33, column 4, lines 23-65, and column 6, lines 35-50). It would have been obvious at the time of the invention for one of ordinary skill to Suito and Stella for the purpose of providing silence detection adaptability during program or channel changes.

7.   Regarding **claim 2**, see the preceding rejection with respect to claim 1. The combination teaches the particular program detection device according to claim 1, further comprising:

> *a noise level learning section operable to learn an association between the noise level currently detected by the noise level detecting section and a previously detected noise level* (see Suito, ¶ 0089 and figure 8, step S23 and see Stella, column 4, line 23 – column 6, line 50 and column 7, line 66 – column 8, line 16); *and*
> *a noise level storing section operable to store a learned noise level learned by the noise level learning section, wherein the detection sensitivity determining section determines the detection sensitivity based on the learned noise level stored in the noise level storing section* (see Suito, ¶ 0090-0091 and figure 8, step S24).

8.   Regarding **claim 3**, see the preceding rejection with respect to claim 2. The combination teaches the particular program detection device according to claim 2,

wherein the particular program detection device further comprises a program information obtaining section operable to obtain program information from the program signal, wherein the noise level storing section stores the learned noise level in association with the program information obtained by the program information obtaining section (see Stella, column 4, line 23 – column 6, line 50), *and*

wherein the detection sensitivity determining section obtains the learned noise level associated with the program information from the noise level storing section in accordance with the program information obtained by the program information obtaining section, and determines the learned noise level as the detection sensitivity to be used when the particular program is detected (see Stella, column 4, line 23 – column 6, line 50).

9.   Regarding **claim 4**, see the preceding rejection with respect to claim 1.

The combination teaches the particular program detection device according

to claim 1, further comprising a broadcast reception section operable to

receive broadcast waves carried in the program signal (see Suito, ¶ 0064), and

operable to output the received program signal to the noise level detecting

section and the silent portion detecting section (see Suito, ¶ 0064-0065, figure 1,

units 2 and 3, and figure 2, unit 3).

10.   Regarding **claim 7**, see the preceding rejection with respect to claim 1.

The combination teaches the particular program detection device according

to claim 1, wherein, when the particular program is a CM (commercial), a time

constant, which causes the increase of the minimum hold value, is determined

such that the increase of the minimum hold value is clipped to a predetermined

value in 15 seconds, which is a minimum time which can be taken by a CM (see

Suito, ¶ 0109 and Stella, column 5, lines 55-60 and column 7, lines 25-39).

11.   Regarding **claim 8**, The combination teaches a particular program

detection method executed by a device for detecting a particular program

segment in a program signal including at least audio data of a program, the

particular program detection method comprising the steps of:

        detecting a noise level of the audio data included in the program signal (see Suito, ¶ 0084)*;*
        determining a detection sensitivity for detecting a particular program in the program signal, the detection sensitivity being determined based on the detected noise level (see Suito, ¶ 0078-0084)*;*
        setting a threshold value, the set threshold value being a minimum hold value, wherein the set minimum hold value <u>*represents a minimum value of the audio data included in the program signal, follows a detected noise level, which is smaller than an immediately previous hold value, each time when the noise level is detected, and gradually increases during a time when the noise level smaller than the minimum hold value is not detected*</u> (see Stella, column 2, lines 9-33)*;*
        changing a rate of the increase of the minimum hold value according to the determined detection sensitivity (see Stella, column 4, lines 23-65, and column 6, lines 35-50)*;*
        detecting a silent portion of the audio data included in the program using the set threshold value (see Suito, ¶ 0088 and figure 8)*; and*
        determining a time interval between each detected silent portion to determine the particular program segment (see Suito, ¶ 0104 and figures 12A-12C)*.*

12.   Regarding **claim 9**, the combination teaches a non-transitory computer-

readable recording medium having a program recorded thereon, the program

causing a particular program detection device to execute a method of

detecting a particular program segment in a program signal including audio

data of a program, the method comprising:

        detecting a noise level of the audio data included in the program signal (see Suito, ¶ 0084)*;*
        determining a detection sensitivity for detecting a particular program in the program signal, the detection sensitivity being determined based on the detected noise level (see Suito, ¶ 0078-0084)*;*
        setting a threshold value, the set threshold value being a minimum hold value, wherein the set minimum hold value <u>*represents a minimum value of the audio data included in the program signal, follows a detected noise level, which is smaller than an immediately previous hold value, each time when the noise level is detected, and gradually increases during a time when the noise level smaller than the minimum hold value is not detected*</u> (see Stella, column 2, lines 9-33)*;*

changing a rate of the increase of the minimum hold value according to the determined detection sensitivity (see Stella, column 4, lines 23-65, and column 6, lines 35-50);
detecting a silent portion of the audio data included in the program using the set threshold value (see Suito, ¶ 0088 and figure 8); *and*
determining a time interval between each detected silent portion to determine the particular program segment (see Suito, ¶ 0104 and figures 12A-12C).

13.   Regarding **claim 10**, the combination teaches an integrated circuit for

use in a particular program detection device for detecting a particular program

segment in a program signal including at least audio data of a program,

wherein the integrated circuit includes circuits functioning:

a noise level detecting section operable to detect a noise level of the audio data included in the program signal (see Suito, ¶ 0084);
a detection sensitivity determining section operable to determine a detection sensitivity for detecting a particular program in the program signal, the detection sensitivity being determined based on the noise level detected by the noise level detecting section (see Suito, ¶ 0078-0084);
a silent portion detecting section operable (i) set a threshold value, the set threshold value being a minimum hold value, wherein the set minimum hold value <u>*represents a minimum value of the audio data included in the program signal, follows a detected noise level, which is smaller than an immediately previous hold value, each time when the noise level is detected, and gradually increases during a time when the noise level smaller than the minimum hold value is not detected,*</u> *(ii) change a rate of the increase of the minimum hold value according to the detection sensitivity determined by the detection sensitivity determining section, and (iii) detect a silent portion of the audio data included in the program signal using the set threshold value* (see Stella, column 2, lines 9-33, column 4, lines 23-65, and column 6, lines 35-50); *and*
a particular program determining section operable to determine a time interval between each silent portion detected by the silent portion detecting section to determine the particular program segment (see Suito, ¶ 0104 and figures 12A-12C).

14.   **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over the

combination of Suito and Stella as applied to claim 1 above.

15.   Regarding **claim 5**, see the preceding rejection with respect to claim 1.

The combination of Suito and Stella teaches the particular program detection

device according to claim 1. Suito teaches a storage device in which the program signal is recorded (see Suito, figure 1, unit 8). However, Suito teaches the output of the storage device is coupled to a read-out circuit and a monitor for viewing (see Suito, ¶ 0066-0067) and does not explicitly teach the output is sent to the noise level detecting section and the silent portion detecting section. Suito teaches the output of the television tuner is sent to these detection sections (see Suito, ¶ 0064), but it would have been obvious at the time of the invention for one of ordinary skill at the time of the invention to have substituted the storage section with a television tuner. One of ordinary skill in the art at the time of the invention would expect a storage device with data stored thereon pertaining to the same information that would have been received by the television tuner to behave in the same manner. It would have been obvious for one of ordinary skill in the art at the time of the invention to substitute the storage device with the television tuner for the purpose of detecting commercials in already recorded programs.

Conclusion

16.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

17.   Skinner, US 4,081,836 A (previously cited), teaches a tuner with an AGC

circuit, wherein the level output by the AGC is indicative of the signal-to-noise

ratio (see column 6, lines 39-41);

18.   Xie, US 5,841,385 A, teaches a voice activity detector to avoid amplifying

background noise (see abstract and column 7, lines 27-45); and

19.   Marash et al., US 6,049,607 A, teaches an interference cancelling device

with a noise gate that has a threshold corresponding to a detected noise level

(see column 4, lines 29-41).

        Any inquiry concerning this communication or earlier communications

from the examiner should be directed to DANIEL R. SELLERS whose telephone

number is (571)272-7528. The examiner can normally be reached on Monday to

Friday, 9am to 5:30pm.

        If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Vivian C. Chin can be reached on (571)272-7848. The fax

phone number for the organization where this application or proceeding is

assigned is 571-273-8300.

Information regarding the status of an application may be obtained from

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you would like assistance from a USPTO Customer Service Representative or

access to the automated information system, call 800-786-9199 (IN USA OR

CANADA) or 571-272-1000.

/Daniel R. Sellers/
Examiner, Art Unit 2614

/VIVIAN CHIN/
Supervisory Patent Examiner, Art Unit 2614